

Work Order ID 142551

Thursday, March 10, 2016 10:12:53 AM

646.9713

B 142551

142551

Page 1

Item ID: 646.9713

REV. D

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Body

Start Date: 3/21/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 3/31/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan: MLS

Date: MAR 10 2016 Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

646.9700

D

100

0.00

100

BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut Blank at 7.425"

DAS
14

9-39

16/03/21

110

0.00

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.02

HAAS CNC vertical machine #1

1-Machine per folio FB464

DWG REV: B

FOLIO REV: 44

DAS
14

9-39

16/03/24

2- deburr and break all sharp edges

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

Work Order ID 142551

Thursday, March 10, 2016 10:12:53 AM

142551

Page 2

Item ID: 646.9713

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Body

Start Date: 3/21/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 3/31/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Memo

0.00

Quality Control

DAS

14

6-23

16/03/24

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.00

Quality Control

Find 2 ϕ 16-03-28

140

Outsource process-Anodize per QSI017 4.1.10.1

0.00

140

Outsource4

Memo

2.40

Outsource process - Anodize

Issue P/O to ATG : 31843

1- Black Anodize as per MPP-172, section 2.1

2- Prime as per MPP-172, section 3.3 & 4.3

Certification of Conformity is required

DAS

13

9-29

2 MAR 28 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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OTHER : ☐									

Work Order ID 142551

Thursday, March 10, 2016 10:12:53 AM

142551

Page 3

Item ID: 646.9713

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Body

Stop ***NS2***

Start Date: 3/21/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 3/31/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.00

Packaging

2x 8p/6 e3-31

155

QC5- Inspect part completeness to step on W/O

0.00

155

QC

Memo

0.00

Quality Control

(2)DAS
38
9-89

MAR 31 2016

180

Identify as per dwg & Stock Location: CK 013

0.00

180

Packaging

Memo

0.00

Packaging

IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV

2DAS
8
9-89

MAR 31 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
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Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Work Order ID 142551

Thursday, March 10, 2016 10:12:54 AM

142551

Page 4

Item ID: 646.9713

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Body

Stop ***NS2***

Start Date: 3/21/2016 Start Qty: 2.00

2

Cust Item ID:

Required Date: 3/31/2016 Req'd Qty: 2.00

2

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.00							
Quality Control									

MLJ APR 01 2016MLJ APR 01 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Thursday, March 10, 2016 10:12:56 AM

Page 1

Work Order ID: 142551

142551

Parent Item: 646.9713

646 9713

Parent Item Name: Body

Start Date: 3/21/2016

Required Date: 3/31/2016

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev.A New issue JFS 16/03/08 Verify by: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B5.000X1.000		Purchased	No			100	f	25.4972	0.62	1.305263			

M7075T6B5 000X1 000

7075-T6 BAR 5.000" X 1.000"

Location

Loc Qty

Loc Code

MAT005

25.4972

M127481

20.9772

- M134164

4.52

1.306

DAS

14

9-33

amf
16/03/24

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

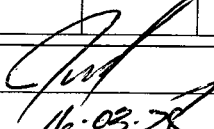
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
		OTHER : ☐							

DART AEROSPACE LTD		Work Order:	142551
Description: BODY		Part Number:	646.9713
Inspection Dwg: 646.9710 Rev: D		Page 1 of 1	

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
.498	$\pm .005$				Vern ML-06	
4.784	$\pm .002$	4.784	—		"	
3.603	$\pm .002$	3.603	—		"	
2.422	$\pm .002$	2.422	—		"	
1.400	$\pm .002$	1.400	—		"	
.375	$\pm .002$	.375	—		"	
.416	$\pm .002$					
.350	$\pm .005$	.350	—		G-pin	
.875	$\pm .005$	.877	—		Vern ML-06	
1.067	$\pm .002$					
2.608	$\pm .002$					
2.750	$\pm .002$					
2.892	$\pm .002$					
3.348	$\pm .002$					
3.597	$\pm .002$					
3.847	$\pm .002$					
.544	$\pm .002$	.545	—		H-G 3/006	
2.195	$\pm .002$	2.195	—		"	
3.395	$\pm .002$	3.395	—		"	
3.495	$\pm .002$	3.496	—		"	
4.595	$\pm .002$	4.595	—		"	
4.687	$\pm .002$	4.687	—		"	
4.734	$\pm .002$	4.734	—		"	
Ø.177	$\pm .005$	Ø.177	—		G-pin	
Ø.201	$\pm .005$	Ø.201	—		"	
.13 X .45°	$\pm .010 \times \pm 1/2^\circ$	.127 X .45°	—		Vern ML-06	
1.500	$\pm .005$	1.505	—		"	
.660	$\pm .005$	.660	—		"	
.660	$\pm .005$	.660	—		"	
.700	$\pm .005$	.700	—		"	
5.500	$\pm .005$	5.500	—		"	
6.8°	$\pm 1/2^\circ$ DAS					

Measured by:	14 9-39	Checked by:		QC Inspector:	
Date:	16/03/24	Date:	16-03-28	Date:	

Engineering Approval: (If necessary)		Date:	
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Rev	Date	Change	Revised by	Approved
B	14.07.31	New Issue	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO.

05345

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY

J. GARDINER

DATE: 03/15/16

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR.

MFG

QC

EFF.

CURRENT ORDER

TRANSACTION CODES (TC):

A-ADD
R-REVISE

C-CREATE
D-DELETE

REASON: REVISED NOTES

ECR:

N/A

ACTION ITEM:

1.

SHEET 1, ZONE A6 IS:

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 2.1, 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.

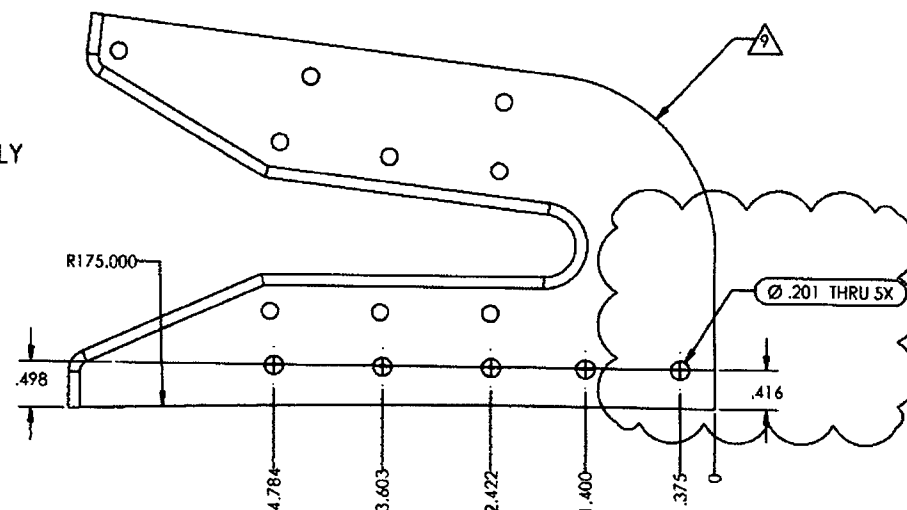
IS

W/O 142551

16-03-24

DEF

SHEET 7, ZONE C5 IS:



DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

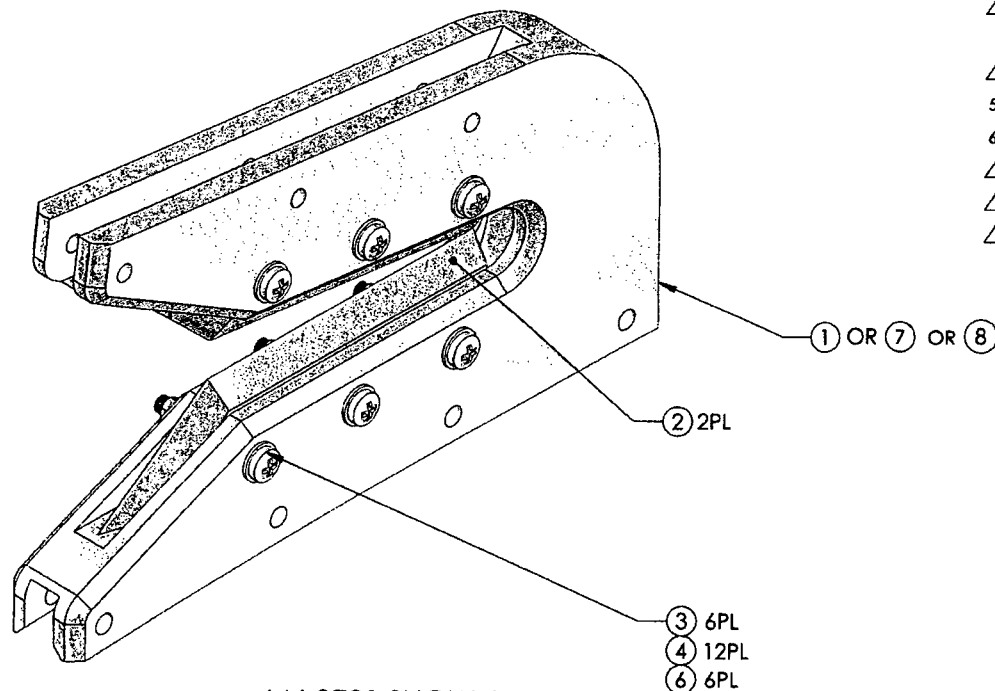
☐ YES ☒ NO

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
1	LAST PROTOTYPE REVISION - P2		N/C
2	INITIAL RELEASE	03/29/09	P. BRAVO
3	INCORPORATED ECH 02741, 02808, 02917	06/04/13	P. BRAVO
4	INCORPORATED ECH 02947	07/02/13	P. BRAVO
5	INCORPORATED ECH 04025	08/09/13	P. BRAVO
6	INCORPORATED ECH 05325	02/26/14	P. BRAVO

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP. DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.



UNINCORPORATED ECN(s)

05345

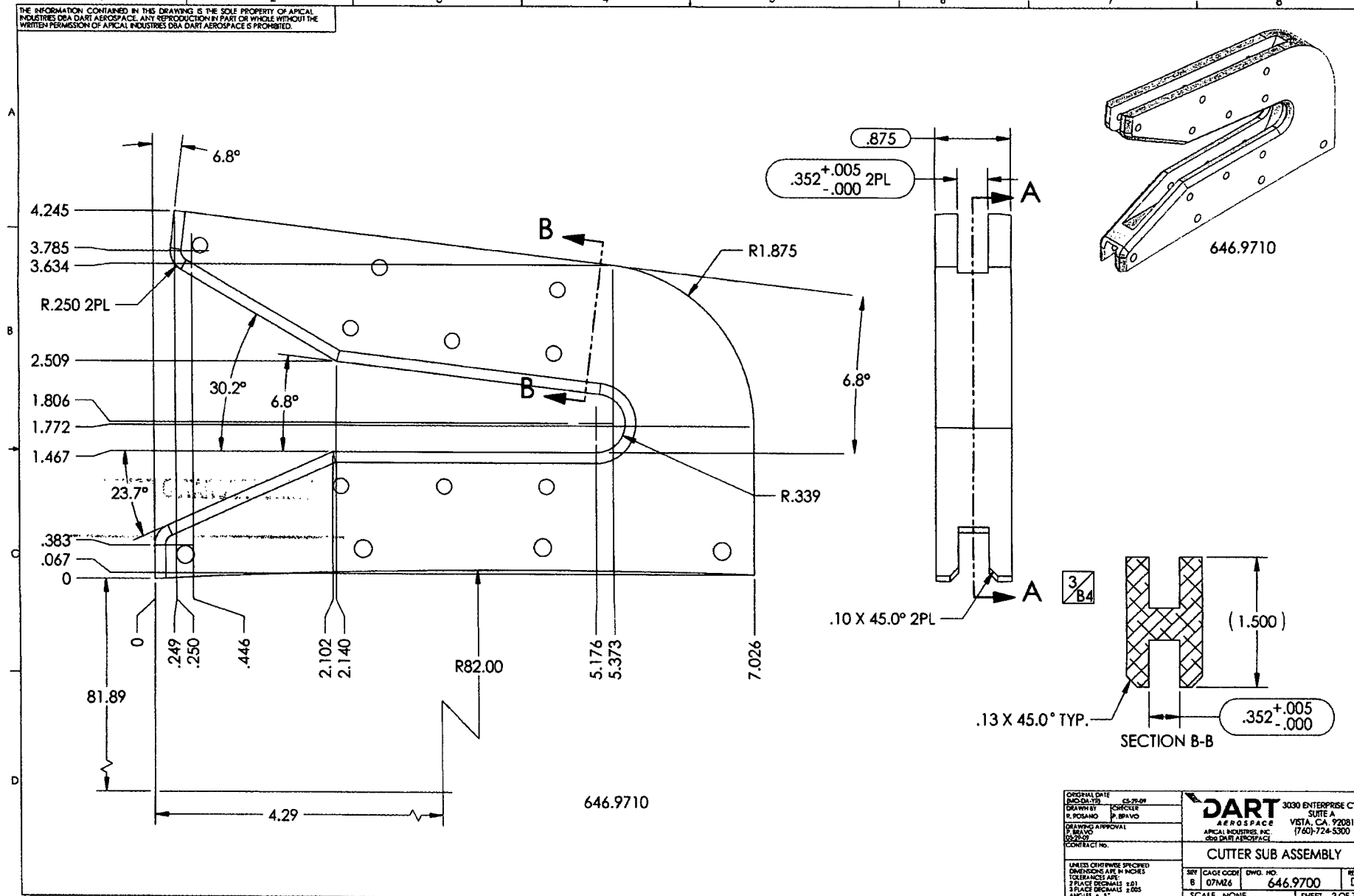
1		8	646.9713	BODY			
	1	7	646.9712	BODY			
6	6	6	601.1541	LOCKNUT	MS21042L08		
A/R	A/R	A/R	5	601.2045	RTV. LOCITE 598		
12	12	12	4	601.2764	WASHER	MS21042L08	
6	6	6	3	601.2765	SCREW	MS27039-0619	
2	2	2	2	646.9711	BLADE		
		1	1	646.9710	BODY		
X				646.9703	CUTTER SUB ASSY		
X	X			646.9702	CUTTER SUB ASSY		
		X		646.9701	CUTTER SUB ASSY		
5703	9702	9701	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.
QTY				PARTS LIST			
NEXT ASSY (S)				ORIGINAL DATE			
646.9600				DRA DART			
				DRAWN BY: E. ROSANO			
				CHECKED BY: P. BRAVO			
				DRAWING APPROVAL: E. BRAVO			
				CONTRACT NO.			
				UNLESS OTHERWISE SPECIFIED			
				DIMENSIONS ARE IN INCHES			
				TOLERANCES ARE:			
				2 PLACE DECIMALS .01			
				3 PLACE DECIMALS .005			
				ANGLES .5°			
				SEE CASE CODE			
				B DTW26			
				SCALE: NONE			
				SHEET 1 OF 7			

DART 3030 ENTERPRISE CT.
SUITE A
VISTA, CA. 92081
(760)-724-5300
APICAL INDUSTRIES, INC.
DRA DART AEROSPACE

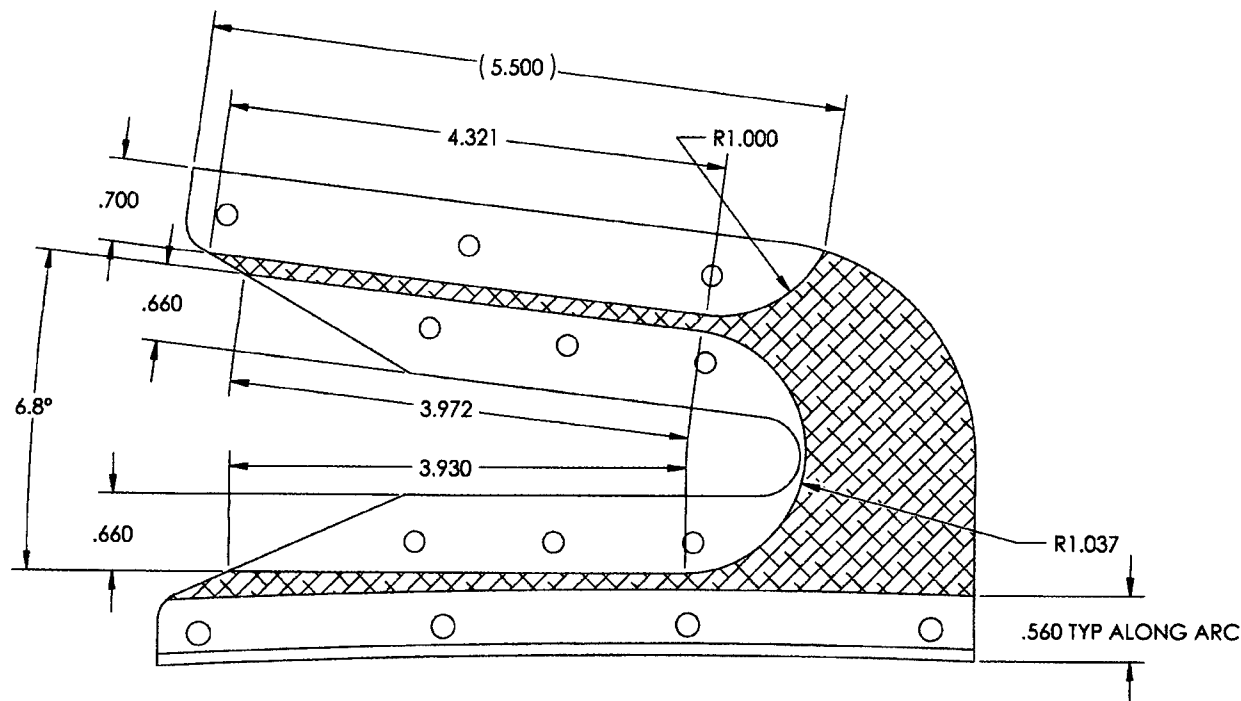
CUTTER SUB ASSEMBLY

REV. D
646.9700
SCALE: NONE
SHEET 1 OF 7

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.



THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DDA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DDA DART AEROSPACE IS PROHIBITED.

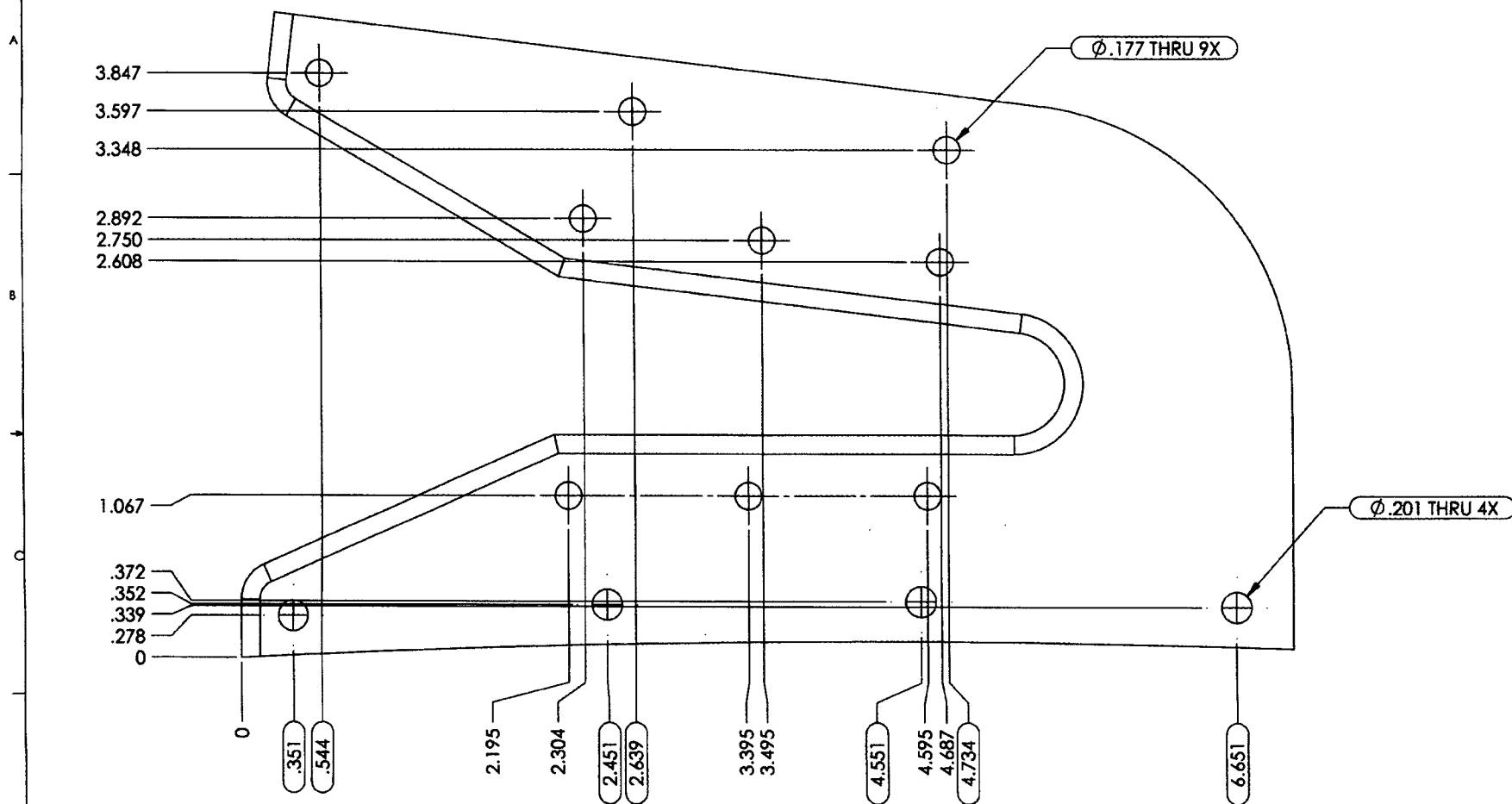


SECTION A-A

646.9710

ORIGINAL DATE 10-27-07	DESIGN BY P. ROSANO	CHECKED BY P. BRAVO	DART 3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5500 APICAL INDUSTRIES, INC. (dba DART AEROSPACE)
DRAWING APPROVAL P. BRAVO	CONTRACT NO.		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS .005 ANGLES ± .5°			
SIZE: B CAGE CODE: 07M26 DWG. NO.: 646.9700 REV.: D SCALE: NONE SHEET: 3 OF 7			

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.

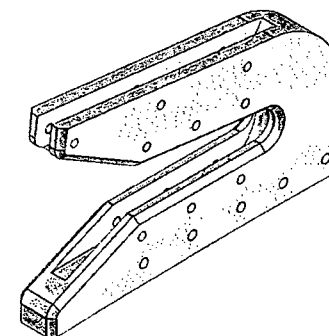
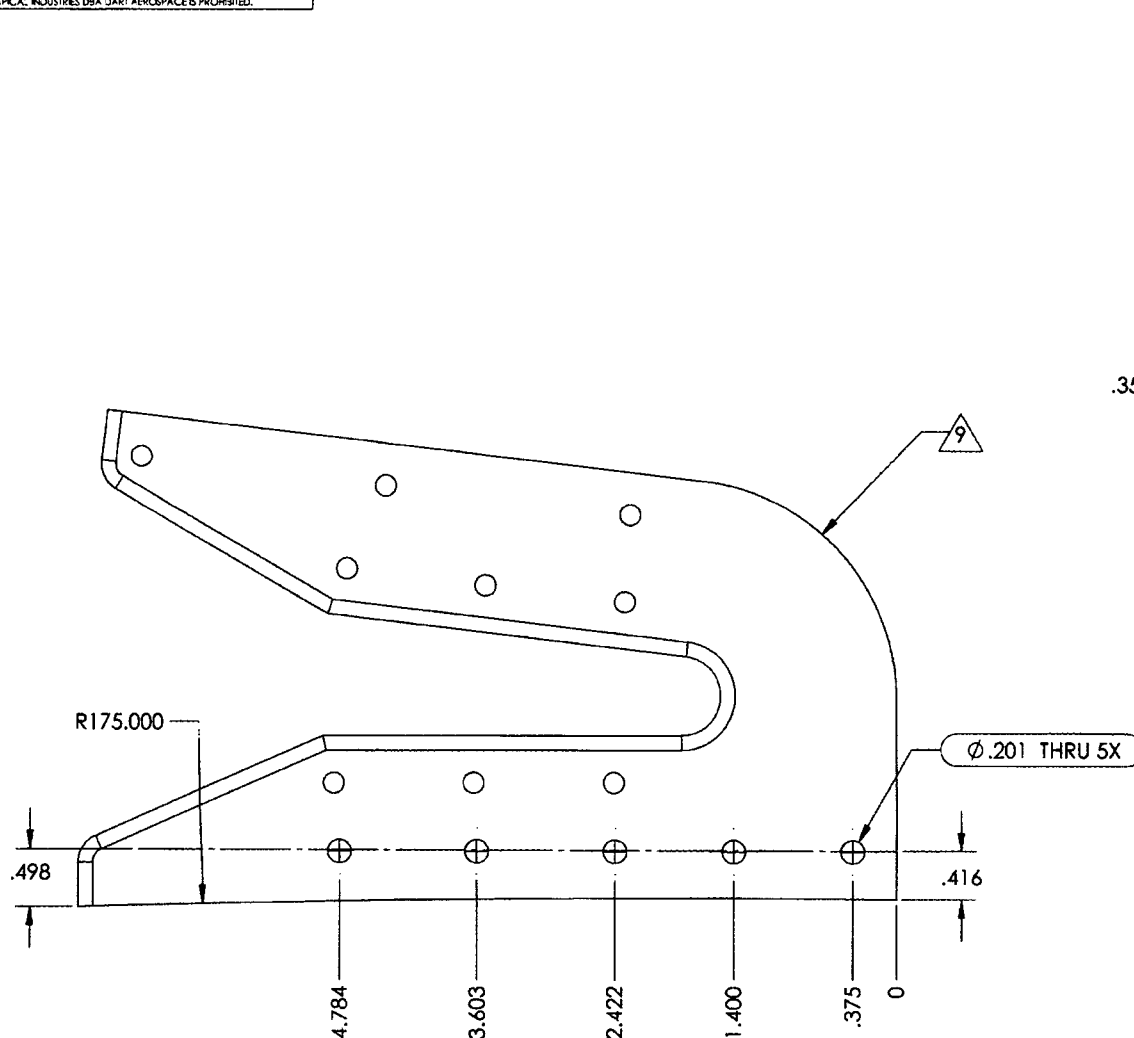


HOLE LOCATIONS +/- .002

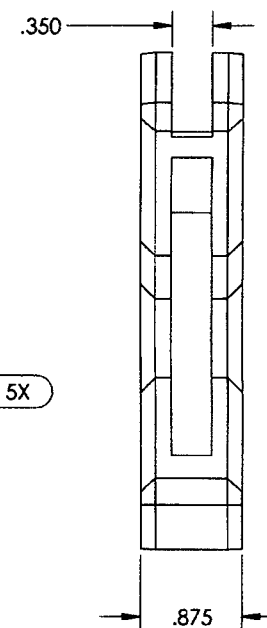
646.9710

ORIGINAL DATE 11/03/00		3030 ENTERPRISE CT., SUITE A, VISTA, CA 92081 (760)-724-5300	
DRAWN BY R. ROSANO		CHECKED P. BRAVO	
DRAWING APPROVAL P. BRAVO		APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
CONTRACT NO.		CUTTER SUB ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.005 ANGLES ± .5°		REV. B 07/02/06	REV. D
SCALE NONE		SHEET 4 OF 7	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.



646.9713



ORIGINAL DATE 05-20-09		3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY R. ROSANO	CHECKED P. BRAYO	APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
DRAWING APPROVAL R. ROSANO		CUTTER SUB ASSEMBLY	
CONTRACT NO.		REV B	D
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS $\pm .005$ 2 PLACE DECIMALS $\pm .005$ ANGLES $\pm 5^\circ$		SCALE NONE	SHEET 7 OF 7

Jean-Luc Menard

From: Jacob Becker
Sent: Friday, March 25, 2016 10:12 AM
To: Jean Francois Sauve
Cc: Jean-Luc Menard; Pablo Bravo
Subject: RE: 646.9713 Correction

Hi Jean,

The minor change was made. Andrea is out but we should still be able to upload documents to the server once that one is approved.

Jacob

From: Jean Francois Sauve
Sent: Thursday, March 24, 2016 6:05 AM
To: Jacob Becker <JBecker@dartaero.com>
Cc: Jean-Luc Menard <jmenard@dartaero.com>; Pablo Bravo <pbravo@dartaero.com>
Subject: FW: 646.9713 Correction

Here's the attachment.

From: Jean Francois Sauve
Sent: March-24-16 9:03 AM
To: Jacob Becker <JBecker@dartaero.com>
Cc: Jean-Luc Menard <jmenard@dartaero.com>; Pablo Bravo <pbravo@dartaero.com>
Subject: 646.9713 Correction

Good morning,

We've notice while measuring the part that the dim. shown on the attachment, coming from the solid model doesn't match the dwg.

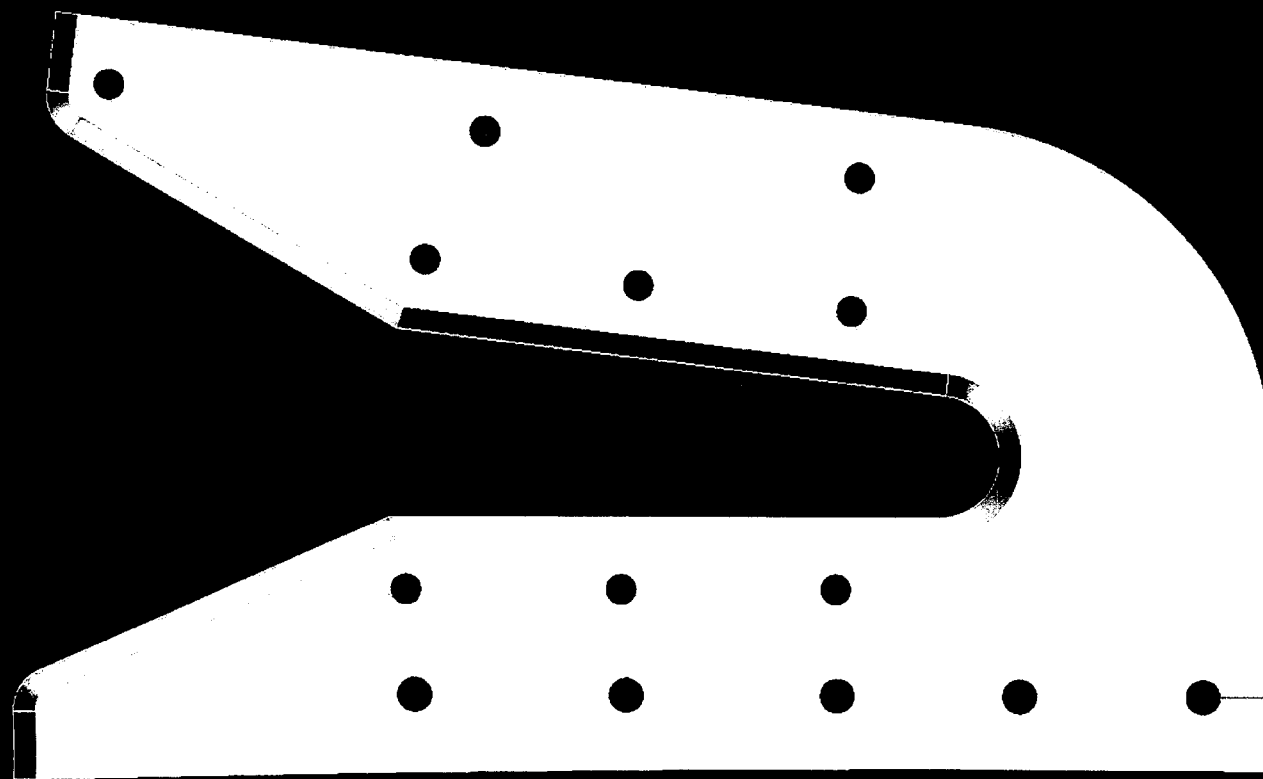
Can you please make the correction on the dwg.

Thanks

JEAN-FRANÇOIS SAUVÉ
Production Engineering Coordinator

DART AEROSPACE
T 1 613 632-5200 > 237
F 1 613 632-5246
1 800 556- 4166
www.dartaerospace.com







Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO31843

Purchase Order Date 3/28/2016

PO Print Date 3/29/2016

Page Number 1 of 3

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED

Contact Name

Vendor Phone

613-446-4544

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

FCA - (Free Carrier)

MAR 29 2016

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
----------	---	------------------------	--------------------------------------	----	--------------------------------	---------------	-------------------

1	142551	646.9713 BODY REV. D	3/30/2016 Yes 3/30/2016		2.00	\$90.00	\$180.00
---	--------	----------------------	-------------------------------	--	------	---------	----------

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE I CLASS N

RUSH PART REQUIRED 2 PCS FOR MARCH 30

SP 16-03-31

Line Total: \$180.00

2	142552	647.1513 UPPER DEFLECTOR REV. C	3/30/2016 Yes 3/30/2016		2.00	\$90.00	\$180.00
---	--------	------------------------------------	-------------------------------	--	------	---------	----------

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE I CLASS N

SP 16-03-31

Line Total: \$180.00

Note:

3/29/2016



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 911469

Date: 30-Mar-16

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Terms		Ship Via	
Quantity	Description		
PLEASE REFERENCE THE PACK LIST NUMBER ON ALL CORRESPONDENCE TO THIS SHIPMENT. IF YOU HAVE ANY QUESTIONS, PLEASE CALL AT (613) 446-4544.			
(2) ea	Part: 646.9713 BODY Job: 19333	Rev: D Line: 1	PO: 31843
2 ea	Part: 647.1513 UPPER DEFLECTOR Job: 19334	Rev: C Line: 2	PO: 31843
20 ea	Part: 646.3110 CHANNEL Job: 19335	Rev: N/C Line: 4	PO: 31843
6 ea	Part: D4823-1 CUTTER DEFLECTOR Job: 19336	Rev: A Line: 5	PO: 31843
1 ea	Part: PROCUREMENT QUALITY CLAUSES Job: 19337	Rev: Line: 6	PO: 31843
DATE: 30/3/16 CERTIFIED SIGNATURE: RECEIVER SIGNATURE: _____			
Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
CERTIFICATE OF CONFORMANCE			
A.T.G. INDUSTRIES INC. CERTIFIES THAT ALL ITEMS IN THIS SHIPMENT CONFORM TO			



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 911469

Date: 30-Mar-16

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Terms		Ship Via
Quantity	Description	
	REQUIREMENTS.	
	MADE IN CANADA.	
	Sp 16-03-31	